Increment 3 Crew Training Matrix

Payload	Procedure Name	CU	DZ	TU	OBT Available	Notes
APCF					**No**	
M3UEMDKAPCFN001	APCF POWER OFF			P		
M3UEEXPRSAPCFN001	APCF ACTIVATION			P		
M3UEEXPRSAPCFN002	APCF DEACTIVATION			P		
M3UEEXPRSAPCFN003	APCF POWER ON			P		
M3UEEXPRSAPCFN004	APCF STATUS CHECK			P		
M3UEEXPRSAPCFM001	APCF MALFUNCTION PROCEDURE			U		
M3UEEXPRSAPCFR001	APCF FRONT PANEL DRAWING			P		
M3UEEXPRSAPCFR002	APCF HARDWARE DESCRIPTION			P		
M3UEEXPRSAPCFR003	APCF CONTROL PANEL DESCRIPTION			P		
M3UEEXPRSAPCFL001	APCF ACTIVATION/DEACTIVATION LOG			P		
M3UEEXPRSAPCFL002	APCF STATUS CHECK LOG			P		
M3UEEXPRSAPCFON001	APCF OPNOM TABLE			P		
ARIS					**YES**	**OBT for ORU replacement only**
MGUEEXPRSARISN001	ARIS Activation	P	B	B	NO	
MGUEEXPRSARISN002	Pushrod Calibration	P	B	B	NO	
MGUEEXPRSARISN003	ARIS Operations	P	B	B	NO	
MGUEEXPRSARISN004	ARIS Monitoring	P	B	B	NO	
MGUEEXPRSARISN005	ARIS Deactivation	P	B	B	NO	
MGUEEXPRSARISN006	Install Snubber Alignment Guides	P	B	B	NO	
MGUEEXPRSARISN007	Remove Snubber Alignment Guides	P	B	B	NO	
MGUEEXPRSARISN010	Install Retractors	P	B	B	NO	
MGUEEXPRSARISN011	Remove Retractors	P	B	B	NO	
MGUEEXPRSARISN012	Install Microgravity Rack Barrier	P	B	B	NO	Done in ARIS ICE Session
MGUEEXPRSARISN013	Remove Microgravity Rack Barrier	P	B	B	NO	Done in ARIS ICE Session
MGUEEXPRSARISC001	Controller Replacement	U	U	U	YES	OBT must be completed
MGUEEXPRSARISC002	Actuator Driver Replacement	U	U	U	YES	OBT must be completed
MGUEEXPRSARISC003	Remote Electronic Unit (A3) Replacement	U	U	U	YES	OBT must be completed
MGUEEXPRSARISC004	Remote Electronic Unit (A4) Replacement	U	U	U	YES	OBT must be completed
MGUEEXPRSARISC005	Remote Electronic Unit (A5) Replacement	U	U	U	YES	OBT must be completed
MGUEEXPRSARISC006	Accelerometer (A6) Replacement	U	U	U	YES	OBT must be completed
MGUEEXPRSARISC007	Accelerometer (A7) Replacement	U	U	U	YES	OBT must be completed
MGUEEXPRSARISC008	Accelerometer (A8) Replacement	U	U	U	YES	OBT must be completed
MGUEEXPRSARISC009	Lower Pushrod/Actuator Assembly (A9) Replacement	U	U	U	YES	OBT must be completed
MGUEEXPRSARISC010	Lower Pushrod/Actuator Assembly(A10)Replacement	U	U	U	YES	OBT must be completed
MGUEEXPRSARISC011	Lower Pushrod/Actuator Assembly(A11)Replacement	U	U	U	YES	OBT must be completed
MGUEEXPRSARISC012	Lower Pushrod/Actuator Assembly(A12)Replacement	U	U	U	YES	OBT must be completed
MGUEEXPRSARISC013	Upper Pushrod/Actuator Assembly(A13)Replacement	U	U	U	YES	OBT must be completed
MGUEEXPRSARISC014	Upper Pushrod/Actuator Assembly(A14)Replacement	U	U	U	YES	OBT must be completed
MGUEEXPRSARISC015	Lower Pushrod/Actuator Assembly(A15)Replacement	U	U	U	YES	OBT must be completed
MGUEEXPRSARISC016	Lower Pushrod/Actuator Assembly(A16)Replacement	U	U	U	YES	OBT must be completed
ARIS ICE					**No**	
M2UEEXPRSICEA001	Set New Shaker Frequency and Amplitude	U	P	U		

Increment 3 Crew Training Matrix

Payload	Procedure Name	CU	DZ	TU	OBT Available	Notes
M2UEEXPRSICEA002	SAMS II Lower Fitting Removal	U	P	U		
M2UEEXPRSICEA003	SAMS II Upper Fitting Assembly Removal	U	U	U		Trained by DF
M2UEEXPRSICEA004	SAMS II Cables Removal	U	P	U		
M2UEEXPRSICEA005	SAMS II Cables Installation	U	P	U		
M2UEEXPRSICEN001	SAMS II Lower Fitting Installation	U	P	U		
M2UEEXPRSICEN002	SAMS II Upper Fitting Installation	U	U	U		Trained by DF
M2UEEXPRSICEN003	Station Shake Installation	U	P	U		
M2UEEXPRSICEN004	Setup for Reduced Sway Space	U	P	U		
M2UEEXPRSICEN005	POP Integration	U	P	U		
M2UEEXPRSICEN006	Reconfigure for POP Control	U	P	U		
M2UEEXPRSICEN007	Rack Shake Installation	U	P	U		
M2UEEXPRSICEN008	Shaker Reorientation	U	P	U		
M2UEEXPRSICEN009	Setup for Full Sway Space	U	P	U		
M2UEEXPRSICEN010	Alternate Umbilical Installation	U	P	U		
M2UEEXPRSICEN011	Hammer Test	U	P	U		
M2UEEXPRSICEN012	Set Frequency Sweep	U	P	U		
M2UEEXPRSICEN013	Pushoff Test with Full Sway Space and Microgravity Rack Barrier Installed	U	P	U		
M2UEEXPRSICEN014	Pushoff Test with Reduced Sway Space and Microgravity Rack Barrier Installed	U	P	U		
M2UEEXPRSICEN015	Pushoff Test with Full Sway Space and Microgravity Rack Barrier Not Installed	U	P	U		
M2UEEXPRSICEN016	POP Activation	U	P	U		
M2UEEXPRSICEN017	Pushoff Test with Reduced Sway Space and Microgravity Rack Barrier Not Installed	U	P	U		
M2UEEXPRSICEN018	ARIS Shaker and ARIS Shaker Controller Deactivation	U	P	U		
M2UEEXPRSICEN019	ARIS Shaker and ARIS Shaker Controller Activation	U	P	U		
M2UEEXPRSICEN021	ICE Final Stow	U	P	U		
M2UEEXPRSICEN022	POP Deactivation	U	P	U		
M2UEEXPRSICEN026	Install Laptop on Adjacent Rack	U	P	U		
M2UEEXPRSICEN027	Rack Shake Move	U	P	U		
M2UEEXPRSICEN028	Stow ARIS Shaker and ARIS Shaker Controller	U	P	U		
M2UEEXPRSICEN029	Disconnect Laptop Cables	U	P	U		
M2UEEXPRSICEN030	Reconnect Laptop Cables	U	P	U		
M2UEEXPRSICEN031	Laptop Test	U	P	U		
M2UEEXPRSICEN032	Setup for Standard Control	U	P	U		
M2UEEXPRSICEN033	Snubber Cup Containment Test	U	P	U		
M2UEEXPRSICEN035	Relocate Laptop to LAB1O1	U	P	U		
MGUEEXPRSARISN012	Install Microgravity Rack Barrier	B	P	B		
MGUEEXPRSARISN013	Remove Microgravity Rack Barrier	B	P	B		
MGUEEXPRSICEN038	ARIS ICE SAMS II SE Installation and Cable Routing	U	U	U		Completed by I2 crew
Biotech Cell Science						
BSTC					**NO**	
M3UEEXPRSBSTCN001	BSTC ACTIVATE	P				
M3UEEXPRSBSTCN002	BSTC ACCESS	P				
M3UEEXPRSBSTCN003	BSTC CLOSE	P				

Increment 3 Crew Training Matrix

Payload	Procedure Name	CU	DZ	TU	OBT Available	Notes
M3UEEXPRSBSTCN004	BSTC ACCESS CRYODEWAR	P				
M3UEEXPRSBSTCN005	BSTC INITIATE EXPERIMENT	P				
M3UEEXPRSBSTCN006	BSTC ANALYZE MEDIA	P				
M3UEEXPRSBSTCN007	BSTC EXCHANGE MEDIA	P				
M3UEEXPRSBSTCN008	BSTC PRESERVE CULTURE	P				
M3UEEXPRSBSTCN009	BSTC DEACTIVATE	P				
M3UEEXPRSBSTCN010	BSTC ACTIVATE GSM	P				
M3UEEXPRSBSTCN011	BSTC CONNECT GAS SUPPLY HOSE	P				
M3UEEXPRSBSTCN012	BSTC DEACTIVATE GSM	P				
M3UEEXPRSBSTCN013	BSTC DISCONNECT GAS SUPPLY HOSE	P				
M3UEEXPRSBSTCN014	BSTC ROUTINE MAINTENANCE	P				
M3UEEXPRSBSTCN015	BSTC GAS PURGE	P				
M3UEEXPRSBSTCR007	7A.1 BSTC DATA LOG BOOK	P				
M3UEEXPRSBSTCCC001	7A.1 SCHEDULE CUE CARD	P				
M3UEEXPRSBSTCM001	OFF-NOMINAL PARAMETER MALFUNCTION	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BSTC.
M3UEEXPRSBSTCM002	CHAMBER TEMPERATURE LOW	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BSTC.
M3UEEXPRSBSTCM003	INLET AIR VELOCITY READING LOW	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BSTC.
M3UEEXPRSBSTCM004	EXHAUST FAN RPM LOW OR 0	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BSTC.
M3UEEXPRSBSTCM005	CO2 CONCENTRATION OFF NOMINAL	P				
M3UEEXPRSBSTCM006	FANS LED OFF	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BSTC.

Increment 3 Crew Training Matrix

Payload	Procedure Name	CU	DZ	TU	OBT Available	Notes
M3UEEXPRSBSTCM007	CHAMBER TEMPERATURE HIGH	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BSTC.
M3UEEXPRSBSTCM008	COMPUTER BOOT FAILURE	P				
M3UEEXPRSBSTCM009	FRONT PANEL DISPLAY BYPASS VIA EXPRESS LAPTOP	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BSTC.
MGUEEXPRSBSTCQ001	QUICK RESPONSE BSTC DEACTIVATION	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BSTC.
M3UEEXPRSBSTCC001	BOOT DRIVE CHANGE	P				
M3UEEXPRSBSTCC002	CO2 BYPASS	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BSTC.
M3UEEXPRSBSTCC003	BSTC PCMCIA CARD CHANGE	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BSTC.
BTR					**NO**	
MGUEEXPRSBTRN001	BTR ACTIVATE	P				
MGUEEXPRSBTRN002	BTR ACCESS	P				
MGUEEXPRSBTRN003	BTR CLOSE	P				
MGUEEXPRSBTRN004	BTR DEACTIVATE	P				
MGUEEXPRSBTRN005	BTR ROUTINE MAINTENANCE	P				
MGUEEXPRSBTRM001	BTR SYSTEM CHECKOUT	P				
MGUEEXPRSBTRM002	POWER LED OFF	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BTR.
MGUEEXPRSBTRM003	INOPERATIVE DISPLAY(S)	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BTR.

Payload	Procedure Name	CU	DZ	TU	OBT Available	Notes
MGUEEXPRSBTRM004	ACTUATING CIRCUIT BREAKER TO ON POSITION DOES NOT POWER UP BTR	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BTR.
MGUEEXPRSBTRM005	ACTUATING CIRCUIT BREAKER TO OFF POSITION DOES NOT SHUT POWER	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BTR.
MGUEEXPRSBTRM006	INABILITY TO SET INTERNAL TEMPERATURE	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BTR.
MGUEEXPRSBTRM007	PREMATURE SHUT DOWN	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BTR.
MGUEEXPRSBTRM008	MARGINAL BTR PERFORMANCE	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BTR.
MGUEEXPRSBTRON001	BTR OPERATIONS NOMENCLATURE	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BTR.
MGUEMDKBTRN001	BTR CONTENTS TRANSFER (SHUTTLE TO ISS)	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BTR.
MGUEMDKBTRN002	BTR CONTENTS TRANSFER (ISS TO SHUTTLE)	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BTR.
MGUEMDKBTRN003	BTR ACCESS	P				
MGUEMDKBTRN004	BTR CLOSE	P				

Payload	Procedure Name	CU	DZ	TU	OBT Available	Notes
MGUEEXPRSBTRQ001	QUICK RESPONSE BTR DEACTIVATION	U				By teaching a representative Mal/Corrective procedure, the PD feels that Cu is capable of performing all Mal/Corrective procedures for BTR.
DCPCG					No	
M3UEEXPRSDCPCGN006	DCPCG SET UP			P		
M3UEEXPRSDCPCGN007	DCPCG SHUT DOWN			P		
M3UEEXPRSDCPCGN008	DCPCG STATUS CHECK (ISS)			P		
M3UEEXPRSDCPCGA34	CRIM-M RESET (ISS)			P		
M3UEEXPRSDCPCGA35	CRIM-M THERMISTOR RECONFIGURATION (ISS)			P		
M3UEEXPRSDCPCGA36	CRIM-M POWER CYCLE (ISS)			P		
M3UEEXPRSDCPCGA37	CRIM-M CMD_TEMP RESET (ISS)			P		
M3UEEXPRSDCPCGA38	DCPCG CLEAN INTAKE FILTER			P		
M3UEEXPRSDCPCGA39	CRIM-M FILTER CHANGE-OUT			P		
M3UEEXPRSDCPCGM001	DCPCG EXCHANGE CAMERA CABLES			P		
M3UEEXPRSDCPCGM002	DCPCG EXCHANGE C-COMPUTER DISKS			P		
M3UEEXPRSDCPCGM003	DCPCG EXCHANGE V-COMPUTER DISKS			P		
M3UEEXPRSDCPCGM005	CRIM-M MESSAGE STATUS (ISS)			P		
M3UEEXPRSDCPCGM006	CRIM-M LCD (ISS)			P		
M3UEEXPRSDCPCGM007	CRIM-M LCD FLASHING ON BATTERY POWER (ISS)			P		
DREAMTiME					YES	
M3UEMDKDMTMR001	FIGURE 1. DREAMTIME CAMERA	B	P	U		
M3UEMDKDMTMR002	FIGURE 2. DREAMTIME LENS	B	P	U		
M3UEMDKDMTMR003	FIGURE 3. DREAMTIME FIGURE CAMERA VIEWFINDER CONTROLS	B	P	U		
M3UEMDKDMTMR004	FIGURE 4. DREAMTIME AUDIO & TIME CODE CT	B	P	U		
M3UEMDKDMTMR005	FIGURE 5. DREAMTIME STATUS PANEL	B	P	U		
M3UEMDKDMTMN001	DREAMTIME CAMERA SETUP	B	P	U		
M3UEMDKDMTMM001	DREAMTIME MALFUNCTION PROCEDURES	B	P	U		
M3UEMDKDMTMCC011	DREAMTIME EDUCATIONAL ACTIVITIES CUE CARD	B	P	U		
M3UEMDKDMTMCC012	DREAMTIME MIDDECK CUE CARD	B	P	U		
M3UEMDKDMTMCC014	DREAMTIME EARTH OBS CUE CARD	B	P	U		
M3UEMDKDMTMCC015	DREAMTIME DOCUMENTARY ACTIVITIES CUE CARD	B	P	U		
M3UEMDKDMTMCC016	DREAMTIME TAPE AND BATTERY CUE	B	P	U		
M3UEMDKDMTML001	DREAMTIME TAPE LOG	B	P	U		
M3UEMDKDMTMCC017	DREAMTIME SETTINGS CUE CARD	B	P	U		
M3UEMDKDMTMN002	DREAMTIME CAMERA STOW	B	P	U		
M3UEMDKDMTMC001	DREAMTIME PIXEL FIX	B	P	U		
EXPPCS					No	
MGUEEXPRSPCSN001	EXPPCS Test Section Installation	U	U	N/A		Not applicable for Inc. 3
MGUEEXPRSPCSN002	EXPPCS Coolant Hose, Cable, HD Installation	U	U	N/A		Not applicable for Inc. 3

Increment 3 Crew Training Matrix

Payload	Procedure Name	CU	DZ	TU	OBT Available	Notes
MGUEEXPRSPCSN003	EXPPCS Activation	U	U	N/A		Not applicable for Inc. 3
MGUEEXPRSPCSN004	EXPPCS Final Deactivation	U	U	N/A		Not applicable for Inc. 3
MGUEEXPRSPCSN005	EXPPCS HD Changeout	U	U	P		
MGUEEXPRSPCSN006	EXPPCS Filter Maintenance	U	U	P		
MGUEEXPRSPCSN007	EXPPCS Removal	U	U	N/A		Not applicable for Inc. 3
MGUEEXPRSPCSN008	EXPPCS Acoustic Closeout Cover Installation	U	U	P		
MGUEEXPRSPCSN009	EXPPCS Acoustic Closeout Cover Removal	U	U	P		
MGUEEXPRSPCSA001	EXPPCS Manual Commanding	U	U	N/A		Not applicable for Inc. 3
MGUEEXPRSPCSA002	EXPPCS Communication Path Selection	U	U	N/A		Not applicable for Inc. 3
MGUEEXPRSPCSA003	EXPPCS Alternate Filter Maintenance	U	U	N/A		Not applicable for Inc. 3
MGUEEXPRSPCSM001	EXPPCS Software Malfunctions	U	U	N/A		Not applicable for Inc. 3
MGUEEXPRSPCSM002	EXPPCS Hardware Malfunctions	U	U	N/A		Not applicable for Inc. 3
EXPRESS					**See Below**	
M2UEEXPRSN001	EXPRESS P/L Resource Configuration Rack #1 (Increment 2	P	P	P		
M2UEEXPRSN002	EXPRESS P/L Resource Configuration Rack #2 (Increment 2)	P	P	P		
M2UEEXPRSN003	EXPRESS P/L Resource Configuration Rack #1 (Increment 2, 7A)	P	P	P		
M2UEEXPRSN004	EXPRESS Rack #2 Umbilical Changeout Power Up	P	P	P		
M2UEEXPRSN005	EXPRESS Rack #2 Umbilical Changeout Power Down	P	P	P		
M2UEEXPRSC001	EXPRESS Rack #1 Configuration After Main To Auxilary Power Switch	U	U	U		not supported by trainer, but simple
M2UEEXPRSC002	EXPRESS Rack #2 Configuration After Main To Auxilary Power Switch	U	U	U		not supported by trainer, but simple
MGUEEXPRSN001	Rack Activation/Checkout	P	P	P		
MGUEEXPRSN008	Rack Deactivation	P	P	P		
MGUEEXPRSN010	Express Rack Power Up	P	P	P		
MGUEEXPRSN011	Express Rack Power Down	P	P	P		
MGUEEXPRSA001	Individual Water Valve Adjustment	P	P	P		
MGUEEXPRSA002	EXPRESS Laptop Computer (ELC) To ELC File Transfer	P	P	P		all file xfer procs identical except for src/dest select
MGUEEXPRSA003	EXPRESS Laptop Computer (ELC) To Express Memory Unit (EMU) File Transfer	U	U	U		not supported by trainer-nearly same as SA002
MGUEEXPRSA004	EXPRESS Laptop Computer (ELC) To Trash File Transfer	U	U	U		not supported by trainer-nearly same as SA002
MGUEEXPRSA005	EXPRESS Memory Unit (EMU) To EXPRESS Laptop Computer (ELC)	U	U	U		not supported by trainer-nearly same as SA002
MGUEEXPRSA006	EXPRESS Memory Unit (EMU) To Payload Executive Processor (PEP) File Transfer	U	U	U		not supported by trainer-nearly same as SA002
MGUEEXPRSA007	EXPRESS Memory Unit (EMU) To Rack Interface Controller (RIC) File Transfer	U	U	U		not supported by trainer-nearly same as SA002
MGUEEXPRSA008	EXPRESS Memory Unit (EMU) To Ground File Transfer	U	U	U		not supported by trainer-nearly same as SA002
MGUEEXPRSA009	EXPRESS Memory Unit (EMU) To Trash File Transfer	P	P	P		
MGUEEXPRSA010	Payload Executive Processor (PEP) To Express Memory Unit (EMU) File Transfer	U	U	U		not supported by trainer-nearly same as SA002
MGUEEXPRSA011	Thermal Control Enabled	P	P	P		
MGUEEXPRSA012	Select Temperature Sensor For Thermal Control	P	P	P		
MGUEEXPRSA013	Select Flow Sensor For Thermal Control	P	P	P		
MGUEEXPRSA014	Change Thermal Control Sensor Limit	P	P	P		
MGUEEXPRSA015	AAA Fan Speed Adjustment	P	P	P		
MGUEEXPRSA016	SSPCM Actual Condition Modification	P	P	P		
MGUEEXPRSA017	Payload Configuration Parameter Modification	P	P	P		
MGUEEXPRSA018	Payload Discrete Modification	P	P	P		
MGUEEXPRSA019	Payload Ancillary Data Modification	P	P	P		

Increment 3 Crew Training Matrix

Payload	Procedure Name	CU	DZ	TU	OBT Available	Notes
MGUEEXPRSA020	Payload Telemetry Modification	P	P	P		
MGUEEXPRSA021	Rack Telemetry Control Modification	P	P	P		
MGUEEXPRSA022	Rack Port Control Modification	P	P	P		
MGUEEXPRSA023	Rack Lan Cam Configuration Modification	P	P	P		
MGUEEXPRSA024	Rack Telemetry Configuration Modification	P	P	P		
MGUEEXPRSA025	Rack Configuration Modification	P	P	P		
MGUEEXPRSA026	SSPCM Initial Configuration Modification	P	P	P		
MGUEEXPRSA027	SSPCM Watchdog Timer	P	P	P		
MGUEEXPRSA028	SSPCM CPU Select	P	P	P		
MGUEEXPRSA029	Water Valve Adjustment By Case	P	P	P		
MGUEEXPRSA030	Thermal Control Disabled	P	P	P		
MGUEEXPRSA031	Change EXPRESS Memory Unit (EMU) Drive	P	P	P		
MGUEEXPRSC001	Payload Data/Power Cable Reconfiguration	P	P	P		
MGUEEXPRSC002	Reconfigure EXPRESS Rack Laptop To RS-232 From Ethernet	P	P	P		not supported by trainer, but discussed
MGUEEXPRSC003	Replace Failed RIC	A	U	U	Yes	Cu will be trained 1/29/01
MGUEEXPRSC004	Replace Failed AAA	U	U	U		no flight spare flown
MGUEEXPRSC005	Replace Failed SAMS EE	U	U	U		no flight spare flown
MGUEEXPRSC006	Replace Failed SSPCM	A	U	U	Yes	Cu will be trained 1/29/01
MGUEEXPRSC007	Replace Failed PEHB	A	U	U	Yes	Cu will be trained 1/29/01
MGUEEXPRSC008	Replace Failed EMU	U	U	U	Yes	no flight spare flown
MGUEEXPRSC009	Replace And Configure EXPRESS Laptop Computer (ELC)	U	U	U		not supported by trainer, but simple
MGUEEXPRSC010	Replace Failed Lamp	U	U	U		not supported by trainer, but simple
MGUEEXPRSC011	Reset Tripped SSPCM Channel	P	P	P		not supported by trainer, but discussed
MGUEEXPRSC012	Manual Reboot Of RIC	U	U	U		not supported by trainer, but simple
MGUEEXPRSC013	Replace Failed ASD	U	U	U		smoke detector, no flight spare flown
MGUEEXPRSC014	Install/ Remove Vent Closeout Panels	U	U	U		not supported by trainer, but simple
MGUEEXPRSQ001	Emergency Rack Shutdown	P	P	P		simple, RMS switch throw - 1 line procedure
MGUEEXPRSM001	EXPRESS Rack Application Fails To Load Or Locks Up	U	U	U		not supported by trainer, but simple reboot
MGUEEXPRSM002	ELC Fails To Communicate With RIC	U	U	U		not supported by trainer, but simple reboot
HRF:						
CSWR					**No**	
MGUEHRFCSWRN001	SETUP HRF PC USING RACK POWER	P	P	P		
MGUEHRFCSWRAC001	HRF COMMON SOFTWARE CHECKOUT	P	P	P		
MGUEHRFCSWRR001	HRF COMMON SOFTWARE NOMINAL OPERATIONS	P	P	P		
MGUEHRFCSWRN004	LOG OFF HRF PC	P	P	P		
MGUEHRFCSWRN005	SHUT DOWN HRF PC	P	P	P		
MGUEHRFCSWRN006	SETUP HRF PC WITH ETHERNET CONNECTION	P	P	P		
MGUEHRFCSWRN007	SETUP HRF PC WITH RS-232	B	B	B		
MGUEHRFCSWRN008	SETUP HRF PC WITH RS-422	B	B	B		
MGUEHRFCSWRN009	SETUP HRF PC USING UOP POWER	B	B	B		
MGUEHRFCSWRN010	DISCONNECT HRF PC FROM UOP	P	P	P		
MGUEHRFCSWRN011	DISCONNECT HRF PC FROM HRF RACK	P	P	P		

Increment 3 Crew Training Matrix

Payload	Procedure Name	CU	DZ	TU	OBT Available	Notes
MGUEHRFCSWRN012	HARD DISK REMOVAL	P	P	P		Assumed trained in systems PC class
MGUEHRFCSWRN013	HARD DISK INSTALLATION	P	P	P		Assumed trained in systems PC class
MGUEHRFCSWRC001	COMMON SOFTWARE DOWNLINK OPERATIONS	P	P	P		
MGUEHRFCSWRC002	RESTORE CONNECTION	P	P	P		
MGUEHRFCSWRC003	HARD DISK CHANGE-OUT (New per Unapproved Inc. 3 ECR)	P	P	P		
Workstation					**Yes**	
MGUEHRFWORKN001	Workstation In-Flight System Functional Test	P	P	P		
MGUEHRFWORKN002	Workstation Nominal Setup (Unapproved Inc. 3 ECR Version diff from Inc. 2)	P	P	P		
MGUEHRFWORKN004	Workstation Nominal Deactivation (New per Inc. 3 ECR - unapproved)	P	P	P		
MGUEHRFWORKC001	Workstation Hard Disk Drive Switch to Backup (New per unaprv. Inc. 3 ECR)	P	P	P		
Rack					**No**	
MGUEHRFRACKN001	HRF Rack Activation	P	P	P		
MGUEHRFRACKN002	HRF Rack Checkout	P	P	P		
MGUEHRFRACKN003	HRF Rack Deactivation	P	P	P		
MGUEHRFRACKC001	Reload Config Files to EMU From HRF PC (New - unaprv. Inc. 3 ECR)	P	P	P		
GASMAP					**Yes**	
MGUEHRFGASMC001	GASMAP Auto Calibration	P	P	P		
MGUEHRFGASMC008	GASMAP Roughing Operations	A	A	A		
MGUEHRFGASMC009	GASMAP Filter and Catheter Change Out	P	P	P		
MGUEHRFGASMM001	GASMAP Flow Rate Out Of Range	P	P	P		
MGUEHRFGASMM002	GASMAP Error Light On	P	P	P		
MGUEHRFGASMM003	GASMAP SERVER DIAGNOSTIC	P	P	P		
MGUEHRFGASMN001	GASMAP 90-Day Health Check	P	P	P		
MGUEHRFGASMN002	GASMAP 30-Day Health Check	P	P	P		
MGUEHRFGASMN003	GASMAP Configuration for HRF Rack	P	P	P		
MGUEHRFGASML001	GASMAP Power Date and Time Log	P	P	P		
MGUEHRFGASML002	GASMAP Analyzer Module Functional Check	P	P	P		
MGUEHRFGASML003	GASMAP Calibration Module Pressure Check	P	P	P		
MGUEHRFGASML004	Gas Calibration Check	P	P	P		
MGUEHRFGASML005	GASMAP IPV and IPC Log	P	P	P		
MGUEHRFGASML006	GASMAP Error Messages	P	P	P		
ULTRASOUND					**Yes**	
MGUEHRFUSNDC001	Ultrasound Operations For Using A Fake Scanhead	U	P	U		
MGUEHRFUSNDC002	Ultrasound Operations For Diagnostics Software	U	P	U		not trained during Nom Ops session
MGUEHRFUSNDC003	Ultrasound Operations For Image Collector Software	U	P	U		not trained during Nom Ops session
MGUEHRFUSNDN001	ULTRASOUND Functional Test 1	U	P	U		
MGUEHRFUSNDN002	ULTRASOUND Functional Test 2	U	P	U		
MGUEHRFUSNDN003	Physiological System Evaluation By ULTRASOUND	U	P	U		

Increment 3 Crew Training Matrix

Payload	Procedure Name	CU	DZ	TU	OBT Available	Notes
MGUEHRFUSNDR001	ULTRASOUND Tower Test Image Fidelity Verification	U	P	U		not trained during Nom Ops session
RENAL STONE					**Yes**	
MGUEHRFRNLSN001	Renal Stone Risk Assessment And Countermeasure Validation	P	P	P		
MGUEHRFRNLSN002	Renal Stone Male Urine Collection Device Adaptation	P	P	P		
MGUEHRFRNLSN003	Renal Stone Female Urine Collection Device Adaptation					not applicable
MGUEHRFRNLSN004	Renal Stone Barcode Reader Operations (ECR pending)	P	P	P		
MGUEHRFRNLSA001	Renal Stone Alternate Procedure For Logging	P	P	P		
BBND					**Yes**	
MGUEHRFBBNDM001	BONNER BALL NEUTRON DETECTOR Lights Out	A	P	B		
MGUEHRFBBNDM002	BBND Malfunction Table	A	P	B		
MGUEHRFBBNDN001	BONNER BALL NEUTRON DETECTOR Operations	A	P	B		
MGUEHRFBBNDN002	BONNER BALL NEUTRON DETECTOR Maintenance	P	P	B		
MGUEHRFBBNDN003	BONNER BALL NEUTRON DETECTOR Hard Drive Stow	A	P	B		
MGUEHRFBBNDN004	BBND Power Off and Stow	A	P	B		
MGUEHRFBBNDN005	BONNER BALL NEUTRON DETECTOR Status Check	A	P	B		
MGUEHRFBBNDN006	BONNER BALL NEUTRON DETECTOR Relocate	A	P	B		
MGUEHRFBBNDR001	Accessory Hardware Placement	A	P	B		
MGUEHRFBBNDR002	BBND Installation	A	P	B		
MGUEHRFBBNDR003	BBND Hard Drive Installation	A	P	B		
INTERACTIONS					**Yes**	
MGUEHRFNTXNA001	HRF Interactions Experiment Operations Using Workstation	A	A	A		as of this date, no training has occurred. However, all 3 crewmembers are expected to participate. WS procedures not trained in Nom Ops training.
MGUEHRFNTXNA002	HRF Interactions Data Backup Procedure Using Workstation	A	A	A		as of this date, no training has occurred. However, all 3 crewmembers are expected to participate. WS procedures not trained in Nom Ops training.
MGUEHRFNTXNN001	HRF Interactions Experiment Operations	A	A	A		as of this date, no training has occurred. However, all 3 crewmembers are expected to participate.
MGUEHRFNTXNN002	HRF Interactions Data Backup Procedure Using HRF PC	A	A	A		as of this date, no training has occurred. However, all 3 crewmembers are expected to participate.
H-REFLEX					**Yes**	

Increment 3 Crew Training Matrix

Payload	Procedure Name	CU	DZ	TU	OBT Available	Notes
MGUEHRFHREFC001	H-REFLEX CORRECTIVE FOR HRTU LOW BATTERY LIGHT	P	P/N	P/N		Russians have not received all required subject training due to ICB issue. However, HRF feels that they may participate in the experiment nevertheless.
MGUEHRFHREFC002	H-REFLEX CORRECTIVE FOR UNACCEPTABLE DATA	P	P/N	P/N		Russians have not received all required subject training due to ICB issue. However, HRF feels that they may participate in the experiment nevertheless.
MGUEHRFHREFN001	Effects Of Altered Gravity On Spinal Cord Excitability (ISS)	P	P/N	P/N		Russians have not received all required subject training due to ICB issue. However, HRF feels that they may participate in the experiment nevertheless.
MGUEMDKHREFN001	Effects Of Altered Gravity On Spinal Cord Excitability (Middeck)	P	P/N	P/N		Russians have not received all required subject training due to ICB issue. However, HRF feels that they may participate in the experiment nevertheless.
MGUEMDKHREFC001	H-REFLEX CORRECTIVE FOR HRTU LOW BATTERY LIGHT	P	P/N	P/N		Russians have not received all required subject training due to ICB issue. However, HRF feels that they may participate in the experiment nevertheless.
MGUEMDKHREFC002	H-REFLEX CORRECTIVE FOR UNACCEPTABLE DATA	P	P/N	P/N		Russians have not received all required subject training due to ICB issue. However, HRF feels that they may participate in the experiment nevertheless.
PuFF					**Yes**	
MGUEHRFPUFFN001	Puff Experiment Operations	P	P/N	P/N		Russians have not received all required subject training due to ICB issue. However, HRF feels that they may participate in the experiment nevertheless.
SAMS II					**No**	Turin received Overview Tng only.
MGUEEXPRSSAMSN001	Interim Control Unit Drawer Setup	U	P	A		
MGUEEXPRSSAMSN002	RTS Drawer Setup For Two External Sensors	U	P	A		
MGUEEXPRSSAMSN003	RTS Drawer Setup For Two Internal Sensors	U	P	A		
MGUEEXPRSSAMSN004	RTS Drawer Setup For One External And One Internal Sensor	U	P	A		
MGUEEXPRSSAMSN005	Interim Control Unit Drawer Activation	U	P	A		
MGUEEXPRSSAMSN006	Remote Triaxial System Drawer Activation	U	P	A		Minimal additional coord needed
MGUEEXPRSSAMSN007	Interim Control Unit Drawer Deactivation	U	P	A		

Increment 3 Crew Training Matrix

Payload	Procedure Name	CU	DZ	TU	OBT Available	Notes
MGUEEXPRSSAMSN008	Remote Triaxial System Drawer Deactivation	U	P	A		Minimal additional coord needed
MGUEEXPRSSAMSN009	Mounting a Stowed Sensor in an ARIS EXPRESS Rack	U	P	A		
MGUEEXPRSSAMSN010	Removing a Sensor in an ARIS EXPRESS Rack	U	P	A		
MGUEEXPRSSAMSN011	Cleaning ICU Drawer Screens	U	P	A		Minimal additional coord needed
MGUEEXPRSSAMSN012	Cleaning RTS Drawer Screens	U	P	A		Minimal additional coord needed
MGUEEXPRSSAMSN013	ICU Drawer Relocation	U	P	A		
MGUEEXPRSSAMSN014	RTS Drawer Relocation	U	P	A		
MGUEEXPRSSAMSN015	Initial RTS Drawer Setup	U	P	A		
MGUEEXPRSSAMSA001	Communication Checkout	U	P	A		
MGUEEXPRSSAMSA002	Status Check	U	P	A		
MGUEEXPRSSAMSA003	System Operations	U	P	A		
MGUEEXPRSSAMSA004	System Maintenance	U	P	A		
MGUEEXPRSSAMSA005	SE Data Acquisition	U	P	A		
MGUEEXPRSSAMSC001	Hard Drive Replacement	U	P	A		
MGUEEXPRSSAMSC002	Laptop Replacement	U	P	A		
MGUEEXPRSSAMSC003	PCB Replacement	U	P	A		
MGUEEXPRSSAMSC004	Temperature Sensor Replacement	U	P	A		
MGUEEXPRSSAMSC005	Fan Replacement in ICU/D	U	P	A		
MGUEEXPRSSAMSC006	Fan Replacement in RTS/D	U	P	A		
MGUEEXPRSSAMSM001	DWR PWR Switch Tripped at RTS/D Activation	U	P	A		
MGUEEXPRSSAMSM002	No Power Light at RTS/D Activation	U	P	A		
MGUEEXPRSSAMSM003	Power Switch Tripped at ICU/D Activation	U	P	A		
MGUEEXPRSSAMSM004	No Power Light at ICU/D Activation	U	P	A		
GGUEEXPRSSAMSQ001	Quick Response Deactivation					
MGUEEXPRSSAMSQ001	Quick Response ICU/D Deactivation	U	P	A		
MGUEEXPRSSAMSQ002	Quick Response RTS/D Deactivation	U	P	A		

LEGEND

P - Prime - Trained on all payload objectives and may perform these activities.

B - Backup - Trained on all payload objectives, may perform activity if necessary.

U - Untrained - (Not trained. Could train under extenuating circurstances after coordination w/PD and completion of Just in time training
and/or guidance from the GSP).

N - Has not met preflight requirements to be allowed to perform activities (BDC, Informed consent, critical skills).

A - Additional coordination/training necessary before activity may be performed.

*Note: Depending on whether the STES team member can make it to the TSC and execute the mal from the ground within time constraints, it will be executed either by the STES team from the TSC (if the member can get to the TSC and can have command coverage), or by the crew with the STES team contact via "black phone" (if the member can't get to the TSC) or via voice loops (if the member can get to the TSC but can't command).

Increment 3 Crew Training Matrix

Payload	Procedure Name	CU	DZ	TU	OBT Available	Notes

In a worst case scenario, where the crew cannot communicate with the ground (and vice-versa), the PD believes the crew could perform PCG-STES mals;

however, if AOS and the crew has to perform a mal, the PD would like it to be understood by the POIC that one of the STES team members should be contacted and be present

via TSC or black phone support during execution of the mal.

**Note: Voss was trained on the Status Check Matrix only. However, PCG-STES believes if Helms were not available, then Voss could execute any of the

above procedures, provided that science was in jeapordy and a PCG-STES representative was on the loops.

*** Note: OBT must be completed prior to this procedure being executed.

**** STS-101 Prime Operator

Training Hour Deltas to matrix
EXPRESS Rack training required 5 hrs. Actual training received 3.5 hours
ARIS training required 2 hrs. Actual training received 1 hr.
HRF Rack/PC/WS training required 5 hrs. Actual training received 3 hrs.
H-REFLEX training required 3.75 hrs. Actual training received 1.25 hrs.